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The Impact of Audit Fee on Audit Quality in UK

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MSc Finance and Investment

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By

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Summary

This thesis investigates the effect of audit fees on audit quality. Audit fees include the normal audit fees and abnormal audit fees. This paper examines how the audit quality proxy by the magnitude of absolute discretionary accruals associated with the abnormal audit fees that we focused on. Through our research, we found that the abnormal audit fees are negatively related to the discretionary accruals. And the sign of the abnormal audit fees will determine the level of audit quality. The ABAFEE is negatively associated with the unsigned discretionary accruals when abnormal audit fees are positive. And when abnormal audit fees are negative, the ABAFEE is positively correlated with the unsigned discretionary accruals. It suggests that the audit quality would not be impaired by the high abnormal audit fees. We also test for other variables relating to the audit quality, and found that non-audit is not significant associated with the discretionary accruals while BIG4 accounting firms with the industry specific auditors help to improve the audit quality than non-BIG4.

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Section I

Introduction

1.1 Background of study

The conflict interest between the shareholders and managers devotes to the agency problem. That's why the independent auditor is needed to mitigate the agent-principal conflict and provide the assurance for the financial information. With a higher audit quality, it can reduce the likelihood of accounting fraud and illegal reporting practices, like manipulating earnings management.

DeAngelo(1981a) has argued that audit quality depends on the joint probability of an auditor discovering and disclosing a problem in an accounting system. Inadequate audit effectiveness could lead to the bankruptcy of an organization. The collapse of Enron is an example that makes governments concerned the excessive offerings of non-audit services impair the independence of auditors, lead to lower audit quality (Knney et al. [2004];Hoitash et al. [2010]).Audit quality should be of the high standards to maintain the risk of bankruptcy at the lowest level. While audit fees, which also refer to the audit pricing or audit expense, determine the maximum audit costs that the accounting firms willing to pay and thus affect the level of audit quality. In this article, we will study the determinants of the audit quality and the impact of the audit fee on the audit quality. Prior audit quality research indicates that the audit failure group exhibits high levels of discretionary accruals. The results support that high level of the abnormal audit fees are associated with the audit quality.

Audit quality is the guarantee of professional competence and independence indicates the audit subject (audit organizations and auditors) role in the audit object (audit object and content) to produce objective results.

1.2 Motivation for the study

Audit quality describes how well an audit detects and reports material misstatements of financial statements, reduces information asymmetry between management and stockholders and therefore helps protect the interests of stockholders.

However, problem is that accruals unlike crash items are accompanied with a degree of ambiguity which results in their reliability reduction. And regarding to the agency problem, proposed accruals can be manipulated by managers in financial reports and their reliability may come to be a question. We need to posit models to find out these problems and provide the empirical evidence.

1.3Contributions to existing knowledge

Several contributions to knowledge are made through this thesis. This paper represents a comprehensive study on audit quality. Using the current data of listed companies for the fiscal years during 2005-2008, we examine the determinant of audit quality and audit fees. From the audit fees model, we sort out the abnormal audit fees through the difference between the audit fees and normal audit fees. The investigation between the audit quality and abnormal audit fees concludes that the sign of the abnormal audit fees determines the level of audit quality. The positive abnormal audit fees contain the excessive incentives for auditors to compromise the independence and thus impair the audit quality. Furthermore, we do some researches examine the influence of abnormal non-audit fees associated with the audit quality. And the results from the abnormal non-audit fees model suggest that there is no asymmetric nonlinearity in the association between the abnormal non-audit fees and audit quality.

1.4 Structure of research

The structure of the research is divided into six sections. In this section, it talks about the background of the study, the motivation and contributions that it makes. In the next section, it focuses on the theoretical framework underpinning this study. It mainly discusses the agency theory and the definition of audit quality, which gives a detailed explanation on the demand for audit services and different levels of audit quality.

Section 3 reviews the prior studies and the results that have been done by other researchers. Based on the literature review, it comes up with three hypotheses for the

further analysis. Section 4 explains the methodology employed in this study. It explains the sample firm selection, the period of the study, the definitions and the measurements of the main variables. The description of the source of data, the data collection procedures and analysis procedures are also discussed.

Section 5 shows the results and discussions for the relationship between the audit fees and audit quality and other analysis. Finally, Section 6 provides an overall summary and limitations of this thesis.

Section II

Theoretical Framework

2.1 Introduction

This Section provides the theoretical framework for the present study. The main discussion is on the audit quality and its relationship with the audit fee. Many factors affect the audit quality: (1) the accounting firm audit quality factors: the accounting firm's quality control, the scale of Certified Public Accountants, Certified Public Accountants of non-audit services, accounting firms, legal responsibilities of the audit quality. (2) The listed company audit quality factors: the governance structure of listed companies, the status of internal audit, personnel, and system specifications impact on audit quality. (3) The impact of audit quality in the audit market factors: the degree of perfection of the audit requirements of the market, low-cost audit pricing phenomenon on audit quality. We will then discuss the determinants of the audit quality.

According to the previous research, whether the association between audit fees and audit quality is asymmetric depends on the sign of abnormal audit fees. The abnormal audit fees are the difference between actual audit fees and the expected, normal level of audit fees. Because of different levels of audit quality, an appropriate model for the measurement is required for the analysis. Several hypothesis related to the analysis of the fee-quality model are also discussed in this chapter. The association between the audit fee, audit quality and earning management are highlighted. Finally, the summary and conclusion are presented in last section.

2.2 Agency theory and information asymmetry

Variations in the level of conflict and information asymmetry are assumed to differ from firm to firm and may demand different levels of auditing and of audit quality (DeAngelo, 1981; Watt and Zinmmerman, 1986). The higher the agency cost, the larger the information asymmetries' gap and thus the higher the levels of audit quality

will be demanded (Basiruddin, 2011). The next section mainly emphasizes on the different levels of audit quality and relevant hypotheses.

2.3 Different levels of audit quality and the three key hypotheses

These three hypotheses are used to explain the demand of audit services and different levels of audit quality.

2.3.1 Monitoring hypotheses

The monitoring hypotheses, obviously, is to monitor managers' opportunist behavior and the credibility of the information provided by managers as well as consider how to improve the investors' opportunities to observe such assets. In order to achieve this, independent audits are needed to provide managers and potential investors with reliable verification and information on the value of assets. Therefore auditors play in a role in monitoring the information provided by managers and mitigate the agent-principal conflict. An independent audit can also mitigate financial statement fraud and illegal reporting and improves the internal control and operational efficiency of a firm (Wallace, 1980; Chow, 1982). With the monitoring function of the audit, managers will carefully prepare the financial reports and reduce the probability of material errors. In addition, it helps to improve existing internal control systems. Such restrictions and recommendations are able to improve the effectiveness and efficiency of a firm's operations.

2.3.2 Information hypotheses

The information hypotheses suggests that the audited financial information is vital for investors since it can reduce market-related and firm-specific risks, improve decision making and provide access to new information for investors. If the information asymmetry is higher, the agency conflicts will be higher. The audit services are demanded to provide high quality audit information to reduce the risk of information uncertainty. The accuracy of information is quite important for investors. According to the information hypothesis, financial information determines market

value. Investors require financial information in order to make a rational investment decision even though they are on the outside of a contract of agent and principal relationships.

2.3.3 Signaling or reputation hypothesis

The signaling hypothesis indicates that the auditor gives a signal on whether the reported financial statements can be reliable. The audit service helps the users of financial statements distinguish between honest and dishonest information. Same as the previous two hypotheses, it mitigates the agent-principal conflict and improves the firm's operation. The signaling hypothesis offers an explanation for different levels of audit quality. Auditors often build a reputation for their audit service thus users can choose the one they want. Once the seller's reputations have been established, they are then able to signal to the buyers that their products are endorsed with higher quality marks. Klein and Leffler (1981) suggest that firms with an established reputation are less likely to produce a low quality product because once the buyers are aware that they have purchased such a product, this information will quickly be disseminated to other buyers. Because it is unobservable and costly to measure the audit quality, the market tends to use good reputation, derived from large auditors, as a signal of a higher quality audit.

Section III

Literature Review and Hypothesis Development

3.1 Introduction

This section reviews the existing literature on three topics: audit quality, audit fee and earnings management. It first reviews the definition of audit quality and how it is measured, and this is followed by discussion and review of the audit fee. Previous studies of the earnings management, particularly those related to the motivation for earnings and earnings management measurement, are also reviewed. These reviews provide a general understanding of the areas of study that is being investigated in this thesis.

Towards the end of this chapter, the discussion and reviews focus on the association between audit quality and audit fee in respect of constraining earnings management. These reviews help to identify similar studies that have been done and which provide potential evidence of research gaps that demand further investigation. For each of the main relationships, the development of tested hypotheses is also disclosed. Finally, the summary and conclusion are presented in the last section.

3.2 Definition of audit quality

DeAngelo(1981) had defined audit quality as "the market assessed joint probability that a given auditor will both (a) discover a breach in the client's accounting system and (b) report the breach." Watts and Zimmerman (1986) simplify DeAngelo's definition where the part (a) refers to auditor's competence and the quantity of inputs devoted to the audit, while the part (b) refers to an auditor's independence.

ICAEW (2002) suggests a definition for audit quality which is "At its heart (audit quality) is about delivering an appropriate professional opinion by the necessary evidence and objective judgments." It means that when auditors provide adequate audit evidence, the regulators assume that such auditors have performed a quality auditing service.

Audit quality includes the technical quality and service quality. Technical quality

consists of reputation capital, capability, expertise, experience and independence scales, while service quality is defined by responsiveness, empathy and the provision of NAS and client services. There are some factors that affect the quality of an audit. Wooten (2003) claims that audit firms, audit teams and the professional judgment or auditor independence are the principal factors that contribute to auditor quality. Since that the characteristics such as human resources, audit processes, industry expertise, supervision, audit planning included in these factors will directly contribute to the skill and competence of auditors in detecting errors and misstatements (Basiruddin, 2011).

In addition, FRC (2008) suggests five key drives for audit quality: (1) the audit firm culture, (2) skills and personal qualities of audit partners and staff, (3) the audit process, (4) usefulness of the audit reporting and (5) factors that are outside the control of the auditors. Therefore, through the internal governance mechanisms and regulatory requirements can help to improve audit quality.

To sum up, audit quality can be described as the ability of an auditor to provide an independent audit which results in a financial statement that is free from misstatement, error and fraud. Since an audit's quality is influenced by three main parties (audit firm, audit' client and regulators), the attributes or factors that are associated with each group can be used as indicators for audit quality. (Basiruddin, 2011)

3.3 Discussion on how to measure audit quality

Through academic research, two potential measures of audit quality are associated with audit procedures: input and output-based measures separately. These two measures are based on choosing the right people to do the right thing and reflecting the accuracy of management's assertions. However, there exist limitations during the process of measurement. It is difficult to make sure the consistency of the input's attributes during the process of the audit engagement. And the result of an audit in the output-based measurements cannot be observable all the time without any business failures or the identification of misstatements. In order to improve the accuracy of

measuring the audit quality, three measures of audit quality will be employed based on auditor reputation and auditor independence points of view, namely, audit fees, NAS fees and industry specialist auditors.

3.3.1 Audit fees

Audit fees can be treated as a proxy for audit quality with some reasons as follows. Some existing research had found that higher audit fees are associated with higher audit quality in order to compensate for the high-price of reputation capital, auditors' industry specialization, as well as for increased audit effort. Thus audit fee is concerned with the signaling or reputation hypothesis. Firms with an established reputation are able to assure that their audit service is of a high quality. Because expanding resources and more efforts had been putted into, a fee premium will be added to these auditors' reputation for a better quality of service.

Audit price can distinguish different levels of audit service. Audit firms like Big 4 auditors charge high audit fees than non-Big 4 auditors for two reasons: higher audit quality and monopoly pricing. Higher audit price can motivate auditors' effort and result in a higher audit quality.

However, some findings show that lower audit fees could also be associated with a perceived higher audit quality. The reason is auditor may take into consideration that firms bound by a strong internal control environment will probably have a lower audit risk thus reducing the audit effort and audit fees by means of an effective internal corporate governance mechanism. A decrease in audit fee indicates that auditors can benefit from strong corporate governance and thus the audit risk and cost of auditing is reduced. Both of these two contribute to a higher audit quality.

Audit fee is a good indicator to measure the audit quality, while it is not perfect to completely reflect the audit quality. The numbers of audit hours which can accurately reflect the audit effort need to be considered as a proxy for audit quality. Deis and Giroux (1996) provide some empirical evidence that audit fees and audit hour are significantly related to audit quality in their analysis of three important attributes:

audit fees, audit hours and audit quality. Hence, it seems reasonable that more audit hours will lead to higher audit fees and promote a higher quality audit.

3.3.2 NAS fees

For the NAS fees, there has been a heated debate about it. Prior empirical studies provide inconsistent findings on the relationship between NAS and auditor's independence. Some studies argue that NAS has little impact on auditor independence (Ryan,2001;Craswell, 1999) and a few suggest that NAS provide feasible advantages(Lai and Krishnan, 2009). A number of empirical studies have been unable to find any association between NAS and auditor independence (Barkess and Simnett, 1994; Craswell, 1999; Ashbaugh et al., 2003; Chung and Kallapur, 2003; DeFound et al., 2002), whereas other studies provide evidence that the joint provision of NAS impairs auditor independence(Wines, 1994; Firth, 2002; Frankel et al. 2002; Raghunandan, 2003; Shaema and Sidhu 2001; Larcker and Richadson, 2004).

Though the NAS fees enhance an auditor's knowledge and competency, it has also been argued that the higher provision of NAS is believed to compromise auditor independence and result in a lower audit quality.

3.3.3 Industry specialist auditors

Industry specialist auditors have got specific knowledge, resources, incentives and experience for different industries and separate the information component from noise. The industry specific knowledge and competency of the auditor are more able to assist their clients in developing industry specific disclosure strategies and enhance the informative of discretionary accruals by constraining aggressive and opportunist reporting of accruals by managers. There is positive relationship between industry specialist auditors and disclosure quality. Evidence shows that the possession of industry specialist knowledge improves auditor performance. In addition, auditors with industry specific experience are more likely to constrain earnings management and the opportunistic behavior of management. They have got rich experience about

the specific industry and effectively improve the operation of the organizations.

It is found that firms which switch from a Big 4 non-specialist to a Big 4 specialist auditor will experience a significant positive abnormal return. These findings indicate that the market perceives audit quality differences based on industry specialization. The industry specialist knowledge obviously improves the efficiency and effectiveness of audit processes and thus increases the quality of auditing services. The use of an industry specialist auditor not only improves the quality of auditing work but is also perceived to be valuable to market participants.

3.4 Analysis of the relationship between the audit fee and audit quality

According to the existing literature, the standards to measure the audit quality are not uniformed. Watts, Zimmerman and DeAngelo(1981) found the firm size can be used to measure the level of audit quality. DeAngelo (1981) proved that the larger of the firm, the smaller the quasi-rent relation to each specific customer accounts for the entire sum of the proportion of quasi-rent, the less likely the firm to opportunistic motives to act and the higher the firm's audit quality can be expected. Caeter et al.(1998) pointed out that the reputation can be applied to evaluate the level of the audit quality. Accounting firms with a high reputation have to pay more in the event of audit failure, so that they have more incentives to maintain a high audit quality. Donald R Reid and Gary A Giroux (1992) suggested that the audit hour can be used to measure the level of audit quality if there is no direct measurement.

3.5 Definition of Earning management

Schipper(1989) defines earnings management “in the sense of purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain”. Healy and Wahlen(1999) claim that earnings management occurs when the managers use their judgment in preparing financial statements with the intention not to report the firm’s actual economic performance or in order to gain

benefit from the “adjusted figure”. Therefore, earnings management can be viewed as the opportunistic behavior of management.

Because of the compensation contracts associated with managers’ private gains, agents manipulate earnings of financial statements to benefit themselves. Only meeting the earnings’ target within the accounting procedures, the agents’ bonus reward can be realized. Thus the opportunistic behavior of agents is motivated by the bonus-related contracts. Prior studies show that managers select income-increasing accruals when the bonus plans are falling below the lower bond, and vice-versa. Managers often manipulate earnings in order to reduce the divergence of reported earnings and to ensure that the current earnings reach the normal or expected target.

In general, market participants and stakeholders appear to reward the firms with positive or higher earnings more than the firms with negative or lower earnings, and therefore managers manipulate earnings to meet these expectations. There is a high probability that firms manipulate earnings when patterns of increasing earnings occur. Managers often use their discretion to manipulate reported earnings, in the next section accruals-based discretion will be discussed.

3.5.1 Accruals-based measure of earnings management

When manipulate the earnings, managers are more favor towards the accruals accounting due to low cost and difficult to observe. The accruals contain two aspects, the discretionary accruals and non-discretionary accruals. The discretionary accruals also can be called abnormal accrual or managed accruals, which always related to earnings manipulation. The non-discretionary accruals therefore is referred as normal accruals or non-managed accruals.

There are three main measures of discretionary accruals in the prior literature. These include the aggregate accruals models, specific accruals models and the frequency distribution approach. Several models are introduced in relation to the aggregate accruals such as Healy’s(1985) model, DeAngelo’s (1986) model, Jone’s(1991) model, the modified Jone’s model from Dechow et al.(1995) and the

performance-adjusted discretionary accruals model by Kothari et al.(2005). The main differences between the models are how the research partitions the non-discretionary accruals component from the total accruals and their ability to accommodate changes in firm's economic condition. Among these models, the aggregate accruals models give rise to more comprehensive research design in capturing the discretionary components.

3.6 Definition of Audit fee

Actual audit fees consist of two parts: (1) normal fees that reflect auditors' effort costs, litigation risk, and normal profits (Simunic 1980; Choi et al. 2008, 2009) and (2) abnormal fees that are specific to an auditor-client relationship (Higgs and Skantz, 2006). Normal fees are mainly determined by factors that are common across different clients, such as client size, client complexity, and client-specific risk, while abnormal fees are determined by factors that are idiosyncratic auditor-client relationship. Kinney and Libby (2002, 109) described the abnormal fee that "may more accurately be likened by attempted bribes" and can better capture economic rents associated with audit services or an auditor's economic bond to a client than normal fees or actual fees.

Abnormal audit fees can be positive and negative. When abnormal fees are positive, the association between abnormal audit fees and audit quality is negative. The higher the abnormal audit fees, the lower the audit quality. The reason is that excessive audit fees can create incentives for auditors to acquiesce to client pressure for substandard reporting and thus erode audit quality. When abnormal audit fees are close to zero or negative, auditors have few incentives to compromise audit quality. Therefore, we can conclude that the association between abnormal audit fees and audit quality is asymmetric and nonlinear, depending on whether audit fees are positive or negative (Basiruddin, 2011).

3.7 Hypotheses Development

3.7.1 The association between audit fee and audit quality

Most of the studies argue that the provision of non-audit service impair the auditor independence and audit quality. However, not only non-audit service influences the auditors' reporting decisions, another key element is excessively high audit fees. Frank et al. (2002) report that the magnitude of absolute discretionary accruals is negatively associated with the percentile ranks of audit fees, suggesting that auditors are less likely to allow biased financial reporting by high-fee clients than by low-fee clients.

We will examine the associate between the audit quality and audit fee using an extended set of audit fee data and a different audit metric, namely, abnormal audit fees instead of actual audit fees. And we measure audit quality using the magnitude of discretionary accruals.

3.7.2 The sign of abnormal audit fees effect on audit quality

Choi et al. (2009) document, the proxy for audit quality is insignificant associated with abnormal audit fees for total sample of clients firms with both positive and negative abnormal fees. However, when separate total observations into those with positive abnormal fees and those with negative abnormal fees, the results change dramatically. When the abnormal fees are positive, the magnitude of absolute discretionary accruals is positively associated with abnormal fees, suggesting a negative relation between audit quality and positive abnormal fees. But the association is insignificant when the abnormal fees are negative. These findings imply that positive and negative abnormal fees create different incentive effects: for clients with positive abnormal fees, auditors are more likely to acquiesce to client pressure as abnormal audit fee increase, whereas for clients with negative abnormal fees, auditors are unlikely to compromise audit quality.

These findings have some reasonable explaining. When the auditor receives unusually high audit fees from a client, which means the abnormal audit fees are positive, the auditor can allow the client to engage in opportunistic earnings

management. For clients with positive abnormal fees, the benefits to the auditor for acquiescing to client pressure for opportunistic earnings management can outweigh the associated costs like increased litigation risk and loss of reputation. We first hypothesize in the followings forms:

H1: There is a positively relationship between the magnitude of abnormal accruals and abnormal audit fees when the clients pay positive abnormal audit fees.

On the other hand, when the abnormal audit fees are negative, auditors have few incentives to compromise audit quality by acquiescing to client pressure for standard reporting. The reason is that the benefit to auditors for retaining these unprofitable clients is not great enough to cover the expected costs associated with substandard reporting. It is quite possible that the more negative the abnormal audit fees, the lower the incentives for auditors to compromise independence and the higher the audit quality. We therefore hypothesize in an alternative form:

H2: There is an insignificantly relationship between the magnitude of abnormal accruals and abnormal audit fees when the clients pay negative abnormal audit fees.

3.7.3 Non-audit fee & audit quality

Fees paid to auditors can affect audit quality in two ways: large fees paid to auditors may increase the effort exerted by auditors, hence, increasing audit quality. Alternatively, large fees paid to auditors, particularly those that are related to non-audit services, make auditors more economically dependent on their clients. Such financial reliance may induce a relationship whereby the auditor becomes reluctant to make appropriate inquires during the audit for fear of losing highly profitable fees(Hoitash et al., 2007).

There are some arguments that the non-audit fees may impair audit quality, in other words, reduce the auditor independence. Due to the collapse of Enron, governments are concerned that excessive offering of non-audit services may impair the independence of auditors, lead to lower quality audits, and increase the likelihood of a financial reporting that violates generally accepted accounting principles (Kinney et

al.[2004],Hoitash et al.[2010]). DeAngelo gave the reason that if non-audit services provide auditors with client-specific rents, companies may be able to obtain more favorable reports by threatening to switch auditor: in this case, non-audit services may reduce independence. In addition, Frankel et al. (2002) has used the association between audit firm fees and two measures of biased financial reporting-firms' discretionary accruals and the likelihood of firms meeting earnings benchmarks-to draw inferences on auditor independence. Their findings prove that auditor independence is comprised when clients pay high non-audit fees relative to total fees. However, there exist some other different opinions, like non-audit services are thought to increase auditor's client knowledge and therefore increase the probability that problems can be discovered. Thus, for a given level of independence, non-audit may increase audit quality. The theoretical relationship between non-audit services and audit quality is ambiguous. To provide empirical evidence on this, we test the following hypothesis:

H3: There is an insignificantly relationship between the non-audit fee and discretionary accruals.

3.7.4 Industry specialist auditors & audit quality

Prior research found that higher audit quality associated with BIG 4 auditors who are able to constrain aggressive and opportunist reporting of discretionary accruals by their clients and thereby improve the ability of discretionary accruals to predict future levels of profitability. Craswell et.al (1995) indicated that BIG 4 auditors devote more resources to staff training and development of industry expertise relative to non-BIG4 auditors. Because their size, BIG 4 auditors are also likely to invest in information technology and employ state of the art techniques to detect earnings management than non-BIG4 auditors. To provide empirical evidence on this, we test the following hypothesis:

H4: There is a negatively relationship between the firms audited by BIG 4 and discretionary accruals.

Section IV Data and Methodology

4.1 Introduction

This Section presents the methodology used to test the hypotheses outlined in Section 3. The first section explains and justifies the sample firms selected and time period which the investigation was carried out. The Section then outlines the definitions and measurements of the hypotheses variables. The model specifications and related control variables, the sources of data and the data analysis procedures are also discussed.

4.2 Sample firms and period of study

We obtain audit fee data from the database FAME. The sample population for this study is the listed companies, which include some variables concerned with the market value, like the book-to-market ratio. These firms are selected because they include a broad range of industrial and commercial activities and account for a significant portion of the UK economic output. The study examines a sample period of the fiscal years 2005-2008, which include the financial crisis that will have significant influence on this study. The Standard Industrial Classification Code was introduced in July 2003 and updated in 2007. It can be used for classifying business establishments and other statistical units by the type of economic activity in which they are engaged.

4.2.1 Sample selection for regression analysis

The initial sample consists of 8205 firm-year observations for the period 2005-2008. These companies are listed companies chosen from the FAME. However, the present study excludes 2324 firms that operate in the financial and utilities sectors, due to their unique characteristics and to specific regulations which may affect the results. The sample size then has been reduced by further 3156 firm-year observations as a result of missing information in DataStream and Fame. After the eliminations, the

remaining sample is of 2725 firm-year observations. The sample selection procedure is summarized in Table 1.

Table 1: Sample selection procedures					
Description	2005	2006	2007	2008	Pooled
Initial sample Excluded:	1641	1641	1641	1641	8205
Financial and Utilities firms	465	465	465	465	2324
Missing data from Fame	639	1176	431	378	3156
Final samples	537	645	745	798	2725

The sample now ensures that each industry portfolio consists of at least ten observations in order to provide an unbiased estimation of different models. In Table 2 Pane A and B, reported the distribution of the sample firms by year and industry.

Table 2:

Pane A: Distribution of sample firms by year										
Year	2005		2006		2007		2008		Pooled	
Sample	N	%	N	%	N	%	N	%	N	%
size	537	19.7	645	23.67	745	27.34	798	29.23	2725	100

Pane B: Distribution of sample firms by industry			
SIC Code	Super Sector Level	N	Percent
01	Agriculture, Forestry and Fishing	18	0.066
05-09	Mining and Quarrying	362	13.28
10-30	Manufacturing	477	17.5
40	Construction	233	8.55
45-47	Wholesale and retail trade; repair of motor vehicles and motorcycle	129	4.73
55-56	Accommodation and food service activities	88	3.23
58-63	Information and communication	290	10.64
68	Real estate activities	111	4.07
69-74	Professional, scientific and technical activities	499	18.31
77-82	Administrative and support service activities	372	13.65
85	Education	21	0.077
86	Human health and social work activities	21	0.077
92-93	Arts, entertainment and recreation	67	2.46
96	Other service activities	32	1.17

98	Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use	10	0.018
Total		2725	100

4.3 The definition and measurement of the hypothesis variables

The variables of interest examined in this study are explained in this section. There are three main variables to be examined: (1) the audit quality proxies; (2) the audit fee proxies; (3) the association between the audit quality and audit fee.

4.3.1 Measurement of Discretionary Accruals

We use discretionary accruals (DA) as a proxy for audit quality because it often contains two elements, one is the noise caused by managers' aggressive and opportunist reporting, the other is the insider information that managers communicate privately. In this paper, we will consider using three different models of DA: the Jones (1991), the modified Jones (1991) and the performance-adjusted model by Kothari et al(2005). The Jones(1991) and the modified Jones models are recognized in the literature as the most powerful models for detecting earnings management(Dechow et al., 1995; Young, 1999). The performance-adjusted discretionary accruals by Kothari et al.(2005) controls the variations of non-discretionary accruals by taking into account the change in total assets, revenues, receivables as well as the firm's performance(e.g. return on assets). The discretionary accruals are estimated using a cross-sectional variation.

4.3.1.1 Discretionary accruals under the Jones model

Firstly, we need to estimate the non-discretionary accruals using the following model. Through the OLS regression, each industry comes out with the different coefficients α_1, α_2,α_3 in each year. Then estimate the error term in the regression model. The error term is the difference between the total accruals and non-discretionary accruals.

$$\frac{TACC_{ijt}}{TA_{ijt-1}} = \alpha_1 \frac{1}{TA_{ijt-1}} + \alpha_2 \frac{\triangle REV_{ijt}}{TA_{ijt-1}} + \alpha_3 \frac{PPE_{ijt}}{TA_{ijt-1}} + e_{ijt} \qquad (1)$$

$$DACC_{ij} = \frac{TACC_{ijt}}{TA_{ijt-1}} - \alpha_1 \frac{1}{TA_{ijt-1}} - \alpha_2 \frac{\triangle REV_{ijt}}{TA_{ijt-1}} - \alpha_3 \frac{PPE_{ijt}}{TA_{ijt-1}}$$

Where:

$DACC_{ij}$= discretionary accruals for sample firm I in industry j for year t;

$TACC_{ijt}$= total accruals for sample firm i in industry j for year t

TA_{ijt-1}=total assets for sample firm i in year j for year t-1

$\triangle REV_{ijt}$=change in account receivables for sample firm i in industry j for year t

PPE_{ijt}=gross property plant and equipment for sample firm I in industry j for year t

e_{ijt}=error term for sample firm I in industry j for year t

The total accruals are computed as earnings before extraordinary items and earnings before discontinued operations, less the net cash flows from operating activities.

4.3.1.2 Discretionary accruals under the modified Jones model

The difference between modified Jones (1991) model and the original Jones model is that the modified one takes into account accounts receivable. The steps to calculate the discretionary accruals are similar to the original Jones model. The model is as follows:

$$\frac{TACC_{ijt}}{TA_{ijt-1}} = \alpha_1 \frac{1}{TA_{ijt-1}} + \alpha_2 \frac{\triangle REV_{ijt}}{TA_{ijt-1}} + \alpha_3 \frac{PPE_{ijt}}{TA_{ijt-1}} + e_{ijt} \qquad (2)$$

$$DACC_{ij} = \frac{TACC_{ijt}}{TA_{ijt-1}} - \alpha_1 \frac{1}{TA_{ijt-1}} - \alpha_2 \frac{\triangle REV_{ijt} - \triangle REC_{ijt}}{TA_{ijt-1}} - \alpha_3 \frac{PPE_{ijt}}{TA_{ijt-1}}$$

Where:

$DACC_{ij}$= discretionary accruals for sample firm I in industry j for year t-1;

$TACC_{ijt}$= total accruals for sample firm i in industry j for year t

TA_{ijt-1}=total assets for sample firm i in year j for year t-1

$\triangle REC_{ijt}$=change in account receivables for sample firm i in industry j for year t

$\triangle REV_{ijt}$=change in revenues for sample firm i in industry j for year t

PPE_{ijt}=gross property plant and equipment for sample firm I in industry j for year t

e_{ijt}=error term for sample firm I in industry j for year t

4.3.1.3 Performance-Adjusted Discretionary Accruals

The lagged ROA is added on the modified Jones (1991) model based on the foregoing and since prior research documents a correlation between discretionary accruals estimates and firm performance. Similarly, the non-discretionary accruals needed to be estimated using the OLS regression and obtain the coefficients of different industries. Then, the error terms are estimated according to the difference between the total accruals and the non-discretionary accruals. It is the discretionary accruals that we needed. The model is as follows:

$$\frac{TACC_{ijt}}{TA_{ijt-1}} = \alpha_1 \frac{1}{TA_{ijt-1}} + \alpha_2 \frac{\triangle REV_{ijt}}{TA_{ijt-1}} + \alpha_3 \frac{PPE_{ijt}}{TA_{ijt-1}} + \alpha_4 ROA_{ijt-1} + e_{ijt} \quad (3)$$

$$DACC_{ij} = \frac{TACC_{ijt}}{TA_{ijt-1}} - \alpha_1 \frac{1}{TA_{ijt-1}} - \alpha_2 \frac{\triangle REV_{ijt} - \triangle REC_{ijt}}{TA_{ijt-1}} - \alpha_3 \frac{PPE_{ijt}}{TA_{ijt-1}} - \alpha_4 ROA_{ijt-1}$$

Where:

$DACC_{ij}$= discretionary accruals for sample firm I in industry j for year t-1;

$TACC_{ijt}$= total accruals for sample firm i in industry j for year t

TA_{ijt-1}=total assets for sample firm i in industry j for year t-1

ROA_{ijt-1}=return on assets for sample firm I in industry j for year t-1

$\triangle REC_{ijt}$=change in account receivables for sample firm i in industry j for year t

$\triangle REV_{ijt}$=change in revenues for sample firm i in industry j for year t

PPE_{ijt}=gross property plant and equipment for sample firm I in industry j for year t

e_{ijt}=error term for sample firm I in industry j for year t

4.3.2 Measurement of Abnormal Audit Fees

The actual audit fees are divided into two parts, one is the expected component, normal audit fee and the other is the unexpected component, abnormal audit fee. Based on the existing literature on audit fee determinants (e.g., Chaney et al/ 2004;

Craswell et al. 1995; DeFond et al. 2002; Sankaraguruswamy and Wisenant 2005; Whisenant et al. 2003), the model is as follows:

$AFEE_{jt}=\alpha_0+\alpha_1 LNTA_{jt}+\alpha_2 NBS_{jt}+\alpha_3 INVREC_{jt}+\alpha_4 EMPLOY_{jt}+\alpha_5 FOREIGN_{jt}+\alpha_6 LOSS_{jt}+\alpha_7 LOSSLAG_{jt}+\alpha_8 LEVE_{jt}+\alpha_9 ROA_{jt}+\alpha_{10} LIQUID_{jt}+\alpha_{11} BIG4_{jt}+\alpha_{12} SHORT\_TEN_{jt}+\alpha_{13} BTM_{jt}+\alpha_{14} CHGSALE_{jt}+\alpha_{15} PENSION_{jt+}$ Industry&Year Dummies+ error term (4)

Where, for client firm j in year t, the variables are defined as follows:

$AFEE_{jt}$ = natural log of actual fees paid to auditors for their financial statement audits (i.e. audit fees) in thousands of dollars in industry j for year t

$LNTA_{jt}$ = natural log of total assets in thousands of dollars in industry j for year t

NBS_{jt} = natural log of 1 plus the number of business segments in industry j for year t

$INVREC_{jt}$ = inventory and receivables dividend by total assets in industry j for year t

$EMPLOY_{jt}$ = square root of the number of employees in industry j for year t

$FOREIGN_{jt}$ = 1 if the firm pays any foreign income tax and 0 otherwise in industry j for year t

$LOSS_{jt}$ = 1 if the firm reported a loss during the year and 0 otherwise in industry j for year t

$LOSSLAG_{jt}$ = 1 if the firm reported a loss during the prior year and 0 otherwise in industry j for year t

$LEVE_{jt}$ = leverage (total liabilities divided by total assets) in industry j for year t

ROA_{jt} = return on assets (income before extraordinary items divided by average total assets) in industry j for year t

$LIQUID_{jt}$ = current assets divided by current liabilities in industry j for year t

$BIG4_{jt}$ = 1 if the auditor is one of the BIG4 and 0 otherwise in industry j for year t

$SHORT\_TEN_{jt}$ = 1 if the auditor is the first or second year of the audit engagement and 0 otherwise in industry j for year t

BTM_{jt} = book-to-market ratio in industry j for year t

$CHGSALE_{jt}$ = sales change from the prior year divided by the prior year's beginning total assets in industry j for year t

$PENSION_{jt}$ = 1 if the firm has a pension or post-retirement and 0 otherwise

in industry j for year t

The demand for audit services is likely to increase with firm size, leading to a positive association between firm size and audit fees. We include LNTA and EMPLOY to control client size. Audit fees are likely to be higher for clients with more complex business operations. We include the variables NBS, NGS, INVERC, FOREIGH, and EXORD to proxy for client complexity. All the coefficients of the aforementioned variables are expected to be positive (Simunic 1980; Choi et al. 2008).

In Eq. (4), we include LOSS, LOSSLAG,LEVE, LIQUID and ROA to proxy for a client's risk characteristics. Since auditors charge higher fees for risky clients (Simunic and Stein, 1996), we predict that the coefficients of LOSS, LOSSLAG, and LEVE are positive whereas those of ROA and LIQUID are negative. We include BIG4 to capture the effect of audit quality differentiation on audit fees. A positive coefficient of BIG4 means the existence of fee premiums for high-quality auditors, namely, the BIG4. The SHORT-TEN variable is included to control fee discounting at initial audit engagements (Sankaraguruswamy and Whisenant, 2005). Firms involved in equity and debt offerings are in a greater need of audit services (Reynolds et al. 2004). In addition, the demand for audit services is greater for high-growth firms than for low-growth firms (Choi and Wong 2007). To control for these effects, we include ISSUE, CHGSALE, and BTM (an inverse measure of growth potential). Following Sankaraguruswamy and Whisenant(2005) and Whisenant et al. (2003), we add the indicator variables PENSION, which represent the existence of pension or post-retirement plans, accounting restatements, and reportable events or disagreement between auditors and client firms, respectively. Finally, we include 12 industry indicator variables as used by Frankel et al.(2002) and year indicator variables to control for industry and yearly differences.

4.3.3 Model for the association between abnormal audit fees and audit

quality

To examine the association between abnormal audit fees and audit quality and whether it is asymmetric between clients with positive versus negative abnormal audit fees, we derive abnormal fees using a fee estimation model drawn from prior literature which takes into account not only the company's size, but also its complexity, risk, and other factors that may affect the fees charged by the auditor (Hoitash et al., 2007). Here we posit the following model that links the magnitude of unsigned or signed discretionary accruals with our test variable, namely, abnormal audit fees (ABAFEE) and the other control variables, we employ tests using the absolute value of abnormal accruals for the same period between 2005 and 2008. Using the unsigned value of abnormal accruals more completely identifies the discretion afforded managers by their auditors and in this context does not require assumptions about auditor bias with regard to the directional effect of an accounting choice (Menon and Williams, 2004).

$$|DA| = \beta_O + \beta_1 POS\_ABAF + \beta_2 ABAFEE + \beta_3 NEG\_ABAF + \beta_4 LNTA + \beta_5 BIG4 + \beta_6 BTM + \beta_7 CHGSALE + \beta_8 LEVE + \beta_9 AUDCHG + \beta_{10} CFO + \text{industry and year dummies} + \text{error term} \quad (5)$$

Where, for each firm and in each year, the variables are defined as follows:

|DA| = the magnitude of unsigned (signed) discretionary accruals

POS_ABAF = the firm has positive abnormal fees (ABAFEE>0)

ABAFEE = abnormal audit fees estimated from Eq.(4)

NEG_ABAF = the firm has positive negative fees (ABAFEE<0)

LNTA= natural log of total assets in thousands of dollars

BIG4= 1 if the auditor is one of the BIG4 and 0 otherwise

BTM= book-to-market ratio

CHGSALE= sales change from the prior year divided by the prior year's beginning total assets

LEVE= leverage (total liabilities divided by total assets)

AUDCHG = 1 if the firm's auditor is in the first year of an audit engagement and otherwise

CFO = cash flow from operations divided by lagged total assets

This model shows the determinants of audit fees, the various factors that dependent on the audit quality. The factors include the firm size, the BIG4 auditors, Change of sales, loss, leverage, issue and so on. Previous research shows that large firms tend to have more suitable and predictable operations and hence report a lower level of discretionary accruals than small firms (e.g., Dechow and Dichev 2002). The LNTA is a control for the size effect. And evidence shows that the BIG 4 auditors are more effective than non-BIG 4 auditors in constraining managers' abilities to manage earnings and thus we include BIG4 to control for the effect. We include BTM and CHGSALE to control for the potential effects of firm growth on the extent of earnings management. Firms with high leverage can have incentives to boost reported earnings due to their concerns over debt covenant or private lending agreement violations and LEVE is therefore included to control for this effect. Ashbaugh et al. (2003) and Kim et al. (2003) , among others, find that firms involved in financing tranctions tend to engage in earnings management more aggressively than those that are not. We include ISSUE to control for the effect. We also include AUDCHG because auditor change is related to the magnitude of discretionary accruals (DeFond and Subramanyam 1998).

Discretionary accruals are positively correlated with firm performance (Kasznik 1999; Kothari et al. 2005) and it is therefore important to control for the effect of firm performance on discretionary accruals. We include CFO to address the problem. Finally, we include industry and year dummies to control for possible variations in accounting standards and regulations across industries and over time.

4.4 Data analysis procedures

To analysis the data, the statistical software STATA 10 is used. The data analysis includes descriptive statistics, the correlation matrix, multivariate regression and

robustness tests. Each of these is now reviewed.

4.4.1 Descriptive statistics and correlation matrix

Descriptive statistics describes the sample data on a single variable in an organized form. It includes the mean, median, standard deviation, minimum, maximum, first quartile and third quartile. The mean, median, first quartile, third quartile and standard deviation measure the central tendency of the variable.

The correlation among the variables is shown by pair wise correlation matrix. This explains the degree of linear association between two variables and range from +1 to -1, where a correlation of ± 1 means that there is a perfect linear relationship between the variables. However, according to Hair et al.(2010:200), a high degree of inter correlation among the independent variables may cause problems of multicollineartiy when the correlation coefficient is above ± 0.90. Multicolinearity may substantially affect the predictive ability of the regression model as well as the estimation of the regression coefficients.

4.4.2 Multivariate regression

The multivariate regression use ordinary least square regression to examine the relationship between single dependent variables and several independent variables. There are five assumptions concerned with the OLS regression model, and they are as follows:

(1) Normality- the errors(residuals) should be normally distributed
(2) Linearity- the relationship between the predictors and the response variable should be linear
(3) Homoscedasticity- the error variance should be constant
(4) Independent- the errors associated with one observation should not be correlated with the errors of other observations
(5) Multicollinearity- there should be no exact collinearity among predictors

4.4.3 Further analysis and robustness test

Several tests were performed after the multivariate regression analysis. The purpose of these additional tests was to give reasonable assurance that the main findings were robust to the various model specifications. The robustness tests include tests for multicollinearity and heteroscedasticity, various regression estimators, client size analysis, and tests for additional control variables and endogeneity. Because our sample includes the period during 2005 to 2008 and different industries, the results are required to check whether they are sensitive to year-specific or industry-specific factors.

Section V Findings and Discussions

5.1 Introduction

This Section mainly presents the findings and discussions for the empirical analysis of the association between the audit fee and audit quality. Basically, there are three models of the audit quality to be examined: the Jones model, the modified Jones model and the performance-adjusted model. Furthermore, the models of the audit fees will also be revisited.

In the following paragraphs, the structure is organized as follows, first is about presents the descriptive statistics and correlation matrix. Then this is followed by estimation of the normal audit fees model, results of the multivariate tests using different samples and variables. And we will do further analysis to check the heteroscedasticity and muticollinearity. The last section summaries and conclude the chapter.

5.2 Descriptive statistics

Table 3 presents the descriptive statistics results from 2005 to 2008; it is worth noting the followings. The mean values of all these three unsigned discretionary value are significantly larger than the fact that median values suggest that the DA distributions are skewed. And we can see, the mean value of signed discretionary accruals is close to zero which means the signed discretionary accruals approach the normal distribution. The mean value of AFEE variable is almost the same as the median value indicates that it is normally distributed. Nearly 12% of the sample firms pay income taxes for their business operations in non-UK tax jurisdiction. The mean value of the EMPLOY is nearly three times of the median value, the skewness is quite obvious. The data shows that there are about 33% of these companies experienced a loss in the current (prior) fiscal year and nearly half of them had their financial statements audited by one of the Big 4 auditors. Another finding is that only 15% of the firms had not started a pension or post-retirement plan. Only 9.21% of the firms in their first year of an audit engagement suggest most of the firms have got experienced

auditors. We can get limited information from Table 3.

Table 3
Distribution of variables

Variables	Mean	Std.Dev.	Min	Median	Max
|DA1|	0.4398586	5.135936	0	0.0551	114.2497
|DA2|	0.4266593	5.110451	0.0001061	0.0539133	114.2996
|DA3|	0.4480879	5.237135	0.0001199	0.0492472	114.3436
DA1	0.1399077	5.152871	-16.6461	0.0092	114.2497
DA2	0.1658128	5.12558	-12.5898	0.009	114.2996
DA3	0.1857584	5.253018	-17.9619	0.0046	114.3436
AFEE	4.735681	1.654492	0.69	4.46	10.62
LNTA	11.2287	2.608457	4.174387	10.76815	20.58958
NBS	3.151818	1.441166	0	2.995732	8.24486
INVREC	0.0636505	0.3209072	-3.595469	0.1167828	0.8780103
EMPLOY	49.42762	81.37914	0	18.05547	640.3702
FOREIGN	0.1199226	0.3251857	0	0	1
LOSS	0.3249516	0.4688104	0	0	1
LOSSLAG	0.1605416	0.3674631	0	0	1
LEVE	3.434315	0.9709164	-10.89968	3.45979	8.05008
ROA	-2.714391	39.97544	-492.09	5.36	51.2
LIQUIDITY	2.844584	7.137265	0.11	1.19	77.82
BIG4	0.4235977	0.4946068	0	0	1
BTM	18.98204	253.8781	-198.67	1.947	4561.895
CHGSALE	0.2309545	2.554624	-20.90358	0.0705279	52.01896
PENSION	0.8336557	0.3727501	0	1	1
CFO	-0.37152	6.468839	-114.4583	0.074079	22.27955
SHORT_TEN	0.1373308	0.3445296	0	0	1
AUDCHG	0.0921569	0.2895312	0	0	1

5.3 Correlation Matrix

The correlation matrix for all variables from 2005 to 2008 indicated in the audit quality-audit fee model is presented in Table 4. As shown in the table, CFO is highly negatively correlated with the signed and unsigned discretionary accruals when using the performance-adjusted model (-0.9974 and -0.9832 respectively). This may suggests that firms with a high operating cash flow are associated with a low level of discretionary accruals. With respect to the structure of correlations among our explanatory variables, it is worth noting the followings. First, LNTA is negatively

correlated with all unsigned discretionary accruals. Other variables like ABAFEE, LEVE, BTM and AUDCHG are positively correlated with unsigned discretionary accruals. This suggests that small firms or firms with high abnormal audit fees, highly levered firms, firms with a high book to market ratio and firms with first year audit engagement are associated with a high level of abnormal fees. Then except for the previous ones, the correlation coefficients for the other pairs of variables are not large. Overall, the correlation statistics shown in Table3 indicates that the results of our multivariate regressions are unlikely to suffer from multicollinearity problems, but we will also check whether this problem truly exists.

Table 4 Pair wise correlation matrix (N=2725)

	DA1	|DA1|	DA2	|DA2|	DA3	|DA3|	ABAFEE	LNTA	LEVE	BIG4	BTM	CFO	CHGSALE	AUDCHG
DA1	1.0000													
|DA1|	-0.6682	1.0000												
DA2	0.5799	-0.2559	1.0000											
|DA2|	-0.4627	0.7452	-0.5114	1.0000										
DA3	0.0361	-0.0077	0.1101	0.0024	1.0000									
|DA3|	-0.1027	0.1121	-0.0293	0.1167	0.9702	1.0000								
ABAFEE	-0.0090	0.0150	-0.0352	0.0298	-0.0429	0.0498	1.0000							
LNTA	0.2842	-0.2685	0.0787	-0.2068	-0.0064	-0.0682	-0.0071	1.0000						
LEVE	0.3162	-0.3317	0.2826	-0.3190	0.0427	0.0062	-0.0371	0.0715	1.0000					
BIG4	0.0896	-0.1639	-0.0204	-0.1322	0.0570	0.0275	-0.0005	0.5811	0.0772	1.0000				
BTM	0.0158	-0.0064	0.0135	-0.0081	0.0012	-0.0024	0.0034	-0.0538	0.0122	-0.0401	1.0000			
CFO	0.0154	-0.0142	-0.0117	-0.0119	-0.9774	-0.9832	0.0452	0.0396	-0.0027	-0.0355	0.0000	1.0000		
CHGSALE	-0.0181	-0.0060	-0.3062	0.1660	0.0024	0.0080	-0.0205	0.0172	-0.0302	0.0142	-0.0176	0.0302	1.0000	
AUDCHG	-0.0156	0.0650	-0.0194	0.0855	0.1394	0.1677	-0.0082	-0.0636	-0.0456	0.0281	-0.0127	-0.1624	0.0047	1.0000

5.4 Estimation of the Discretionary Accruals Model

In Table 5, it shows the results on estimation of the discretionary accruals with three models. We use the sample of SIC Code 05-09, which is the Mining and Quarrying, in the 2005 with 57 observations. As we can see from the Table 5, the results are quite good for that the variables are significant associated with the dependent variable, like the variable $\frac{1}{\mathrm{TA}_{\mathrm{ijt}-1}}$ is significant negatively correlated with the variable $\frac{\mathrm{TACC}_{\mathrm{ijt}}}{\mathrm{TA}_{\mathrm{ijt}-1}}$, while $\frac{\mathrm{PPE}_{\mathrm{ijt}}}{\mathrm{TA}_{\mathrm{ijt}-1}}$ is positively correlated. And the R-squared is average 85% which has a high explanatory power. Therefore, we can obtain the

discretionary accruals from these three models and may receive good results for the following models.

Table 5 Results on Estimation of the Discretionary Accruals

Variables	Jones Model	Modified Jones Model	Performance-adjusted Model
	Using $\frac{TACC_{ijt}}{TA_{ijt-1}}$ as the dependent variable		
$\frac{1}{TA_{ijt-1}}$	-336.7***	-314.6***	-355.8***
	(-13.54)	(-8.72)	(-12.42)
$\frac{\triangle REV_{ijt}}{TA_{ijt-1}}$	0.507***		
	(28.76)		
$\frac{PPE_{ijt}}{TA_{ijt-1}}$	0.168**	0.819***	-0.0138
	(2.69)	(11.27)	(-0.12)
$\frac{\triangle REV_{ijt}-\triangle REC_{ijt}}{TA_{ijt-1}}$		-0.375***	0.192**
		(-19.00)	(2.77)
ROA_{ijt-1}			-0.00157
			(-1.37)
_cons	0.0521	-0.0377	0.0678
	(1.30)	(-0.66)	(1.68)
N	57	57	56
Adjusted R^2	0.9873	0.9730	0.8025

5.5 Estimation of the Normal Audit Fee Model

Table 6 reports the regression results for the audit fee model during the period 2005-2008. There are 2725 observations. The t values are presented on an adjusted level, using robust standard errors corrected for heteroskedasticity and firm-level clustering. The Table 6 shows that the explanatory power of the model is 86%, suggesting that our audit fee determinants can explain a significant portion of the

variations in audit fees. In addition, most of the individual coefficients for our fee determinants in the audit fee model are highly significant with predicted signs. This model is the normal audit fee model used for calculating the difference between AFEE and normal audit fees therefore obtain the abnormal audit fees (AFEE). Look at the Table 6, nearly all of the variables are positively correlated with the audit fees. And the variables LNTA, NBS, EMPLOY, FOREIGN, LOSS, LIQUIDITY, BIG4, CHGSALE and PENSION are significantly associated with the audit fees. We use this model to get the normal audit fee and calculate the abnormal audit fees.

Table 6 Estimation of Normal Audit Fees

Variables	Predicted Sign	AFEE
LNTA	+	0.412***
		-16.34
NBS	+	0.193***
		-5.54
INVERC	+	-0.223
		(-1.25)
EMPLOY	+	0.00292***
		-3.33
FOREIGN	+	0.381***
		-4.99
LOSS	+	0.193**
		-2.87
LOSSLAG	+	0.0481
		-0.65
LEVE	+	0.0394
		-1.22
ROA	-	0.000331
		(-0.26)
LIQUIDITY	-	0.0199**
		(-3.16)
BIG4	+	0.132*
		-2
BTM	-	0.0000465
		(-1.04)
CHGSALE	-	0.00657**
		(-2.85)
PENSION	+	0.198*
		(-2.52)

SHORT_TEN	-	0.12
		(-1.34)
_cons		-1.034***
		(-4.25)
N		2725
Adjusted R^2		0.8661

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

In Table 7, we can clearly see the distribution of the abnormal audit fees. Among all the sample firms, half of the observations are classified as having positive valued of ABAFEE, and the remaining firms have the negative values of ABAFEE. Therefore the mean or median value of ABAFEE is zero. Table 7 presents the distributional properties of ABAFEE for the full sample (N=2725), the subsample of clients with ABAFEE>0(N= 1487), and for the subsample of clients with ABAFEE<0(N=1238).

As shown in Table 7, the residual values, which refer to the abnormal audit fees that obtained from the audit fee model, spread widely. The first and third quartile is -33.73% and 28.77% respectively, the inter-quartile range is 62.5%. The distribution of the positive abnormal fee is similar to the negative abnormal fee, which the inter-quartile is 40.46% and 40.61% separately. And the number of their median value is very close. It can be considered as a normal distribution.

Table 7. Distributions of abnormal audit fees

Variable	ABAFEE	ABAFEE>0	ABAFEE<0
Mean	-0.0379099	0.3669368	-0.4002526
Std. Dev	0.5154454	0.2822132	0.3860748
1%	-1.441829	0.002595	-2.283338
25%	-0.3373732	0.1403682	-0.5517571
Median	-0.0224689	0.3044501	-0.3144876
75%	0.2877218	0.5450008	-0.145695
99%	1.105973	1.205786	-0.0040066
N	2725	1487	1238

5.6 Results of Multivariate Tests

5.6.1 Results of full sample on the association of unsigned discretionary accruals with abnormal audit fees, audit fees and absolute abnormal audit fees

In this section, we examined abnormal audit fees paid to auditors during the period 2005-2008 and found a relatively significant positive relation to the discretionary accruals. We used three metrics to assess audit quality: two accruals quality measured by the Jones Model and the modified Jones Model; the third one is the performance-adjusted model. We first estimate Eq.(5) using the full sample of 2725 firms which include observations with both positive and negative abnormal fees. Table 8 reports the regression results using the three measurements of discretionary accruals as the dependent variable. We separate them into three sections. In each section, the first column presents the results of regression using abnormal audit fee(ABAFEE) as a measure of auditors' economic bounding to clients while the second column reports the same regression using actual audit fees(AFEE). In the third column, the absolute value of abnormal audit fees is used, denoted by |ABAFEE|.

The model shown in Table 8 has an adjusted R^2 of average 25 percent when using the |DA1| and |DA2|, while the |DA3| has 97 percent which suggests a significant portion of the variation in discretionary accruals. Whereas the results presented by the third model are not significant. Therefore, we will focus on the significant regression results using the second model. A close look into the regression results, we can find that the magnitude of discretionary accruals is significantly positive associated with ABAFEE and AFEE. The results are consistent with evidence reported in Frankel et al. (2002) who report a significant coefficient on their audit fee metrics. According to Frankel et al. (2002), the audit fees are negatively associated with unsigned discretionary accruals. However, our empirical evidence proves that auditors are not compromised by higher abnormal audit fees and could still remain independence. Choi et al. (2005) had separated the full sample into two subsamples; one is the firms with all positive abnormal fees and the other with all negative abnormal fees to see any differences. Here we revisit the regression to check whether the sign of the

abnormal fee will influence the results.

Table 8. Full sample results on the association of unsigned discretionary accruals with abnormal audit fees, audit fees and absolute abnormal audit fees

	Section A Using |DA1| as the dependent variables			Section B Using |DA2| as the dependent variables		
	(1a)	(2a)	(3a)	(1b)	(2b)	(3b)
ABAFEE	0.000707			0.00911*		
	(0.04)			(2.16)		
AFEE		0.00875*			0.00911*	
		(2.10)			(2.16)	
|ABAFEE|			0.0338			.0117
			(1.61)			(0.55)
LNTA	-0.0192***	-0.0155***	-0.0145***	-0.0148***	-0.0148***	-0.0142***
	(-4.76)	(-4.74)	(-4.46)	(-4.47)	(-4.47)	(-4.30)
LEVE	-0.0638***	-0.0717***	-0.0725***	-0.0752***	-0.0752***	-0.0757***
	(-7.43)	(-10.58)	(-10.74)	(-10.98)	(-10.98)	(-11.03)
BIG4	-0.000237	0.00779	0.00846	-0.00257	-0.00257	-0.00368
	(-0.01)	(0.46)	(0.05)	(-0.15)	(-0.15)	(-0.22)
BTM	-0.0000197	-0.00000143	-0.00000509	-0.00000523	-0.00000523	-0.0000112
	(-0.37)	(-0.04)	(-0.13)	(-0.13)	(-0.13)	(-0.27)
CFO	0.0000716	0.000160	0.0000364	-0.000156	-0.000156	-0.000202
	(0.03)	(0.10)	(0.02)	(-0.09)	(-0.09)	(-0.12)
CHGSALE	-0.00334	-0.00716	-0.00858	-0.0459**	-0.0459**	-0.0479***
	(-0.23)	(-0.50)	(-0.61)	(-3.20)	(-3.20)	(-3.33)
AUDCHG	0.0313	0.0403	0.0421	0.0553*	0.0553*	0.0571*
	(0.97)	(1.51)	(1.59)	(2.06)	(2.06)	(2.12)
_cons	0.545***	0.461***	0.481***	0.479***	0.479***	0.514***
	(10.85)	(10.19)	(11.46)	(10.46)	(10.46)	(12.05)
N	2725					
Adjusted R^2	0.1729	0.2715	0.2699	0.1670	0.2954	0.2896

All t-statistics in parentheses are calculated using White's(1980) consistent standard error estimates to correct for heteroskedasticity. t statistics in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Section C			
Using |DA3| as the dependent variables			
	(1c)	(2c)	(3c)
ABAFEE	-0.00857		
	(-0.57)		
AFEE		0.00628	
		-1.47	
|ABAFEE|			-0.0399
			(-1.86)
LNTA	-0.0143***	-0.0128***	-0.0130***
	(-3.86)	(-3.83)	(-3.92)
LEVE	0.00667	0.00241	0.00211
	-0.85	-0.35	-0.31
BIG4	0.0251	0.0162	0.0135
	-1.3	-0.93	-0.79
BTM	-0.0000192	-0.0000176	-0.0000253
	(-0.40)	(-0.42)	(-0.61)
CFO	-0.236***	-0.236***	-0.236***
	(-120.12)	(-138.43)	(-139.45)
CHGSALE	0.0645***	-0.0255	-0.0290*
	-4.78	(-1.75)	(-2.01)
AUDCHG	0.0275	0.0358	0.0379
	-0.93	-1.31	-1.4
_cons	0.218***	0.197***	0.247***
	-4.74	-4.25	-5.76
N	2725		
Adjusted R2	0.9694	0.979	0.9792

All t-statistics in parentheses are calculated using White's(1980) consistent standard error estimates to correct for heteroskedasticity.t statistics in parentheses,* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.6.2 Results of Subsample results on the association between discretionary accruals and abnormal audit fees

Table 9 presents the subsample results on the association between discretionary accruals and abnormal audit fees. When we separated the samples with different signs, the results summarized to two parts. The ABAFEE is negatively associated with the unsigned discretionary accruals when abnormal audit fees are positive. And when

abnormal audit fees are negative, the ABAFEE is positively correlated with the unsigned discretionary accruals. However, this is contrary to Choi et al.(2005) who report the asymmetry discretionary accruals-audit fee association between the two distinct samples suggests that the structure of auditors' incentives to compromise audit quality differs systematically for clients with positive abnormal fees(the more profitable clients) vs. clients with negative abnormal fees(the less profitable clients). Our results is remain stable with the previous results suggest that auditors are not compromised by higher abnormal audit fees and could still remain independence.

Table 9 Subsample results on the association between discretionary accruals and abnormal audit fees

Section A			Section B	
Using |DA1| as the dependent variable			Using |DA2| as the dependent variable	
	(1a)	(2a)	(1b)	(2b)
	ABAFEE>0	ABAFEE<0	ABAFEE>0	ABAFEE<0
ABAFEE	-0.0319	0.33	-0.0109	0.369
	(-0.21)	-1.39	(-0.09)	-1.31
LNTA	-0.0468	-0.0554	-0.0393	-0.0603
	(-1.68)	(-1.77)	(-1.72)	(-1.62)
LEVE	-0.0635	0.127	-0.0731	0.199
	(-1.29)	-1.4	(-1.82)	-1.84
BIG4	-0.0282	-0.0172	-0.0332	0.0486
	(-0.20)	(-0.10)	(-0.28)	-0.25
BTM	-0.00427	0.0000165	-0.00298	0.000178
	(-0.98)	-0.06	(-0.84)	-0.53
CHGSALE	0.835***	0.538***	0.587***	0.530***
	-11.18	-29.01	-9.62	-24.03
CFO	-0.0147	-0.991***	-0.012	-0.981***
	(-1.38)	(-69.67)	(-1.38)	(-57.99)
AUDCHG	0.732**	0.152	0.629***	-0.14
	-3.32	-0.63	-3.49	(-0.49)
_cons	0.763*	0.508	0.739**	0.321
	-2.28	-1.21	-2.7	-0.64
N	2725			
Adjusted R^2	0.5842	0.5988	0.4219	0.4879

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Section C		
Using |DA3| as dependent variable		
	(1c)	(2c)
	ABAFEE>0	ABAFEE<0
ABAFEE	-0.0694	0.484
	(-0.61)	-1.37
LNTA	-0.0176	-0.0785
	(-0.84)	(-1.69)
LEVE	0.0243	0.239
	-0.65	-1.77
BIG4	-0.0212	0.0943
	(-0.20)	-0.38
BTM	-0.0025	0.000272
	(-0.76)	-0.64
CHGSALE	0.747***	0.535***
	-13.25	-19.38
CFO	-0.248***	-0.975***
	(-30.73)	(-46.05)
AUDCHG	0.385*	-0.312
	-2.32	(-0.87)
_cons	0.141	0.397
	-0.56	-0.63
N	2725	
Adjusted R^2	0.4932	0.4693

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

5.6.3 Analysis other variables

Then we watch the other dependent variables in Table 8. The coefficients on LNTA are significantly negative in all cases, suggesting larger size firms are less likely to compromise the audit quality. The coefficients on LEVE are significantly negative when using the |DA1| and |DA2| while insignificantly positive in using |DA3|. The coefficients on BIG4 auditors are negative but not significant which cannot prove that the BIG4 auditors are more effective than non-BIG4 auditors in constraining opportunistic earnings management. But we will examine the variable BIG4 in the

later section. The coefficient on BTM is negatively insignificant in all cases. The variable CFO is negatively significant using the third model for discretionary accruals suggesting that higher operating cash flow firms can reduce the probability of opportunistic earnings management. The coefficients on CHGSALE are different in all cases, part is negative and part is positive. The coefficients on AUDCHG are positively insignificant in all cases.

5.7 Additional tests

In this section, we will do some additional tests to examine the hypotheses made before and conclude the results of some specific variables associated with the audit quality.

5.7.1 Results of Non-audit fee and discretionary accruals

Firstly, we replace the abnormal audit fee by the non-audit fee and re-estimate the Equation (5). The results presented in Table 10. Though we regress through three different models, the results tend to be similar. The non-audit fees are negatively correlated with the discretionary accruals. This result suggests that the non-audit fees would not impair the audit quality. The higher of the non-audit fees, the lower of the discretionary accruals. But the non-audit fees are not significantly correlated with the discretionary accruals. Therefore the hypothesis 3 is rejected.

Table 10 **Results on the association between Non-audit fees and audit quality**

Variables	|DA1|	|DA2|	|DA3|
Non-audit fees	-0.000288	-0.000403	-0.000317
	(-0.30)	(-0.42)	(-0.44)
LNTA	0.185	0.203*	0.155*
	(1.80)	(2.01)	(2.01)
LEVE	-0.0742	-0.0801	0.0142
	(-0.53)	(-0.58)	(0.14)
BIG4	-0.631	-0.612	-0.414
	(-1.68)	(-1.66)	(-1.46)
BTM	0.00931***	0.00935***	0.00716***
	(14.64)	(14.92)	(14.92)
CHGSALE	0.380***	0.402***	0.500***
	(6.91)	(7.41)	(12.03)

CFO	-0.397***	-0.396***	-0.537***
	(-15.54)	(-15.73)	(-27.86)
AUDCHG	-0.921	-1.076	-0.920*
	(-1.61)	(-1.91)	(-2.13)
_cons	-1.422	-1.611	-1.533
	(-1.31)	(-1.50)	(-1.87)
N	386		
Adjusted R^2	0.7651	0.7712	0.8703

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Most of the research investigated whether the provision of non-audit services decrease auditor independence using the ratios of non-audit fees to total fees, which refers to the fee ratio, as the measure of the economic bond. However, the fee ratio does not capture the economic importance of the client to the audit firm. Here, we use another two measurements to examine the impact of non-audit fee on the audit quality, first one is to re-estimate Eq. (5) using abnormal NAS fees (ABAFEE) and the other is using the ratio of NAS fees to audit fees (FEERATIO) as the dependent variable.

As shown in Table 11, the results of regression using abnormal NAS fee are presented. Here the abnormal NAS fees are defined as abnormal NAS fees deflated by natural log of NAS fees. And similar to the abnormal fees, the abnormal NAS fees obtained from the Eq.(4) using NAS fees(instead of audit fees) as the dependent variable. We divided the sample into two sections, section A is the regression results of the abnormal NAS fees while section B shows the results of ratios of NAS fees to audit fees.

In columns (1a) and (2a) of section A, the coefficient on ABNAFEE is insignificant positive associate with the discretionary accruals; hence H3 that non-audit fees has a significant association with the audit quality is rejected. The overall results for both subsamples are insignificant positive. In Section B, the results is similar to Section A. The coefficient on FEERATIO is also insignificant associate with the discretionary accruals. We document a positive association between the absolute value of firm's discretionary current accruals and fee ratio, regardless of which performance-adjusted accrual measure is used. However, we find little evidence supporting the claim that

auditors violate their independence as the result of clients paying high fees or having high fee ratios. This is consistent with Chung and Kallapur's(2003) findings that there is no association between their audit fee metrics and the absolute value of discretionary accruals measured with the modified Jones model(Ashbaugh et al., 2003).

Table 11
Results of regression of |DA1| on abnormal non-audit fees, fee ratio
Using |DA1| as the dependent variable

Section A			Section B	
	(1a)	(2a)	(1b)	(2b)
	ABNAFEE>0	ABNAFEE<0	FEERATIO>1	FEERATIO<1
ABAFEE	0.322	0.0426		
	-0.73	-0.79		
				0.0108
FEERATIO				-0.77
			0.989	
			-1.5	
LNTA	0.0269	0.282	-0.131	-0.0000769
	-0.1	-0.76	(-1.45)	(-0.00)
BIG4	-0.444	0.00894	-0.654	-0.00233
	(-0.32)	-0.24	(-1.46)	(-0.03)
BTM	-0.333	0.417***	0.00922***	0.00113
	(-1.19)	-4.9	-13.33	-0.28
CHGSALE	-1.777	-0.121	0.333***	0.197***
	(-0.54)	(-0.73)	-6.03	-4.56
LEVE	0.0826	-1.936***	-0.0541	-0.0403
	-0.14	(-13.15)	(-0.34)	(-0.88)
CFO	0.0166	-0.122	-0.402***	-1.242***
	-0.64	(-0.35)	(-14.55)	(-13.49)
AUDCHG	1.688	-0.18	-0.408	-0.390**
	-1.63	(-0.38)	(-0.66)	(-2.69)
_cons	0.979	0.258	-0.545	0.35
	-0.31	-0.32	(-0.53)	-1.41
N	2725			
Adjusted R^2	0.298	0.941	0.7611	0.6155

t statistics in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In summary, the insignificant coefficients on ABNFEE and FEERATIO for both subsamples, along with the significant coefficients on ABAFEE only for the positive ABAFEE as reported in Table 8 suggest that the significant associations between unsigned accruals and abnormal total fees that we observed in Table 10 are primarily driven by abnormal audit fees rather than abnormal NAS fees.

5.7.2 Results of BIG4& Non-BIG4 association with the audit quality

To examine whether firms that audited by BIG4 would influence the audit quality, we separated the samples into two groups, one group that audited by the BIG4, the other group audited by the Non-BIG4. And we use three sections based on the three measurements of the discretionary accruals. We re-estimate the equation (5) for the year 2005. Each section contains the BIG4 group and Non-BIG4 group. A close look at the Table 12, we can find that only using the |DA3| can result in a high explanatory power of 95% and 99%. It interprets the evidence that when firms audited by BIG4 the ABAFEE are negatively correlated with the discretionary accruals and firms that audited by Non-BIG4 the ABAFEE are positively associated with the discretionary accruals. We thus can conclude that firms that audited by BIG4 are more likely to have a high level of audit quality than firms that audited by Non-BIG4. This result supports the hypothesis 4. Because high quality auditors have the expertise, resources, and incentives to separate the information component from noise, they can enhance the informativeness of discretionary accruals by constraining aggressive and opportunist reporting of accruals by managers (Krishnan, 2002).

Table 12 results of the BIG4 and Non-BIG4 association with the audit quality

	Section A		Section B	
	Using |DA1| as the dependent variables		Using |DA2| as the dependent variables	
	Non-BIG4	BIG4	Non-BIG4	BIG4
ABAFEE	0.105	0.00323	0.0798	0.0132
	-0.89	-0.25	-0.56	-0.69
LNTA	-0.0692*	0.00124	-0.0582	-0.00132
	(-2.43)	-0.39	(-1.68)	(-0.28)

LEVE	0.0827	0.0172	0.0946	0.0228
	-1.67	-1.59	-1.57	-1.44
BIG4	0	0	0	0
BTM	0.000204	0.00000836	0.000565	-0.0000307
	-0.76	-0.02	-1.73	(-0.05)
CHGSALE	0.526***	0.0217	0.499***	0.218***
	-30.1	-1.78	-23.41	-12.23
CFO	-0.984***	0.000334	-0.961***	-0.00073
	(-73.84)	-0.28	(-59.18)	(-0.42)
AUDCHG	0.123	0.00404	-0.296	-0.0133
	-0.57	-0.16	(-1.12)	(-0.35)
_cons	0.54	-0.00648	0.396	-0.0114
	-1.64	(-0.11)	-0.99	(-0.14)
N	2725			
Adjusted R^2	0.9805	0.0279	0.9707	0.4132

t statistics in parentheses

* p < 0.05, ** p < 0.01, *** p < 0.001

Section C		
Using |DA3| as the dependent variable		
	Non-BIG4	BIG4
ABAFEE	0.0902	-0.0121
	-0.52	(-1.08)
LNTA	-0.0751	0.00255
	(-1.81)	-0.93
LEVE	0.169*	0.00147
	-2.33	-0.16
BIG4	0	0
BTM	0.00049	0.0000336
	-1.25	-0.09
CHGSALE	0.525***	0.204***
	-20.55	-19.6
CFO	-0.966***	-0.237***
	(-49.66)	(-232.27)
AUDCHG	-0.449	0.011
	(-1.41)	-0.5
_cons	0.299	0.0202

	-0.62	-0.42
N	2725	
Adjusted R^2	0.9587	0.9964

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

5.8 Summary for the Hypotheses Test

Table 13 shows the results of the hypotheses association we tested.

Table 13

The summary of the hypotheses and the findings-the association between the audit fees and audit quality

Hypotheses	Findings
H1: There is a positively relationship between the magnitude of abnormal accruals and abnormal audit fees when the clients pay positive abnormal audit fees.	Supported
H2: There is a negatively relationship between the magnitude of abnormal accruals and abnormal audit fees when the clients pay negative abnormal audit fees.	Not Supported
H3: There is a significantly relationship between the non-audit fee and discretionary accruals.	Not Supported
H4: There is a negatively relationship between the firms audited by BIG 4 and discretionary accruals.	Supported

5.9 Further analysis and robustness test

The results above we have got needed further analysis to check the heteroscedasticity and muticollinearity. We use the Breush-Pagan or Cook-Weiberg test to do the check for the fee-quality model. If the p-value is significant, then the null hypothesis that the variance of the residuals is constant would be rejected. Hence the heteroscdasticity is proved to be existed. As shown in table 14, the p-value is significant means that the variance of residuals is not constant. Therefore, the null hypothesis has to be rejected.

Table 14

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance Variables: fitted values of var1
chi2(1) = 19439.75 Prob > chi2 = 0.0000

The table 4 has shown the Perason correlation matrix results. Here we calculate the variance inflation factor (VIF) and tolerance value to check whether the muticollinaerrity exist. The results are presented in Table 15. If the variables have VIF values greater than 10 or tolerance values lower than 0.10, then they are considered to have multicollinearity problems(Gujarati, 2003:339). All the variables have VIF values that are approximately 1.00 to 4.11 and tolerance values that are higher than 0.10 this suggests no multicollinearity problems exists.

Table 15

VIF and tolerance value for fee-quality model		
Variables	VIF	Tolerance
|DA1|	4.11	0.2431
ABAFEE	1.00	0.9957
LNTA	1.54	0.6485
LEVE	1.01	0.9874
BIG4	1.55	0.6467
BTM	2.50	0.4001
CFO	1.14	0.8760
CHGSALE	2.77	0.3614
AUGCHG	1.04	0.9596
Mean VIF	1.85	

Last but not the least, we examine the robustness of our findings. Firstly, we re-estimate the regression of the Eq.(5) using the percentage measure of abnormal audit fees, which is the abnormal fees divided by total audit fees. It doesn't appear to be much different from the previous one. Then we check whether the results are different through our period of 2005 to 2008, each year of the sample are regressed. As we expected, in 2008 the results is quite different from before because the

financial crisis have an effect on the outcomes. Third, we re-estimate the regression by eliminating extreme tail observations to examine the factors of outliers, the result remain the same level and not fluctuant too much. In a word, the sample that we chosen is stationary over the period except the year 2008.

Section VI Summary and Conclusion

6.1 Overview, summary and conclusion of the study

Audit quality and earnings management have been the focus of the researchers' debate in the recent years. It concerns the future development of the firms which depend on the audit service. Since the accruals can let managers communicate their private and inside information, the economic value then will be increased. To measure the level of the audit quality, we use the discretionary accruals as the proxy of the audit quality. In this paper, we applied three models for the audit quality in case there is any biases exist. Furthermore, we focus on the audit fees which have a relationship with the audit quality. The audit fees mainly contain two parts, the normal audit fees and the abnormal audit fees. The normal audit fees, as we all know, reflect auditors' effort costs, litigation risk and normal profits, while the abnormal audit fees which specific to the auditor-client relationship may influence the results of the financial reporting. Based on these predictions, we developed the fee-quality model to provide empirical evidence.

Our findings are consistent with some previous researches. We found that the abnormal audit fees are significantly negative associated with the discretionary accruals. Our empirical evidence proves that auditors are not compromised by higher abnormal audit fees and could still remain independence. We examine some additional tests and find that the variable BIG4 will improve the audit quality while the non-audit fees are not significantly correlated with audit quality.

6.2 Limitations of the study

Though our study provides useful insight into current debate about the dependence of the auditor, there still exist some limitations about the investigation. First, we use the data during the period 2005 to 2008, followed by the financial crisis that has a significant influence on our research. Secondly, we utilize accruals to construct our measures of earnings quality. It is well known that using accruals might be a noisy proxy for management's discretion over earnings. Though we have attempted to control for the effects of year and industry dummies on accruals, the measurement

errors cannot be rule out in the discretionary measures. Third, we include abnormal fees in our empirical analysis to address concerns relative to client importance and fee composition. Although we compute abnormal fees using fee prediction models that appear to be well-specified, we cannot rule out the possibility of an unknown degree of model misstatement, and omitted variables, on our results. Finally, our results are driven by the inability of our empirical analyses to adequately capture the impact of unobservable risk. Though we attempt to explore this possibility employing a variety of alternatives, our results remain qualitatively unchanged.

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